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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,794	10/04/2002	Leif Andersson	11145-023US1	9287

7590 10/25/2006  
Fish & Richardson  
Suite 3300  
60 South Sixth Street  
Minneapolis, MN 55402

EXAMINER	
MONSHIPOURI, MARYAM	
ART UNIT	PAPER NUMBER
1656	

DATE MAILED: 10/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/070,794	<b>Applicant(s)</b> ANDERSSON ET AL.	
	<b>Examiner</b> Maryam Monshipouri	<b>Art Unit</b> 1656	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23, 26, 27 and 38-43 is/are pending in the application.  
     4a) Of the above claim(s) 1-10 and 18-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-17, 21-23, 26-27, 38-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                               | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input checked="" type="checkbox"/> Other: <u>see attachment</u> .                  |

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Claims 24-25, 28-37 have been canceled. Claims 1-10, 18-20 are withdrawn as drawn to non-elected invention.

With respect to applicant's traversal arguments, directed to lack of unity held between human and porcine AMPK, which are basically identical to those provided in the previous response, applicant is kindly advised to review the previous office action wherein the examiner already addressed applicant's traversal arguments. In view of the examiner's explanations in the last two office actions lack of unity between Groups II(a) and II(b) is maintained and is hereby made **Final**.

Applicant's request of rejoinder of claims 11-17 and 21 with the previously elected invention is acknowledged and agreed upon. Claims 11-17, 21-23, and newly added claims 38-43 are still at issue and are present for examination.

Applicants' arguments filed on 8/1/2006 have been fully considered and are deemed to be persuasive to overcome some of the rejections previously applied. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn.

### ***Specification***

The disclosure is objected to for recitation of hyperlink language (see for example, page 2). Applicant is advised to delete said language all through the disclosure. Appropriate correction is required.

Also the description of drawings are scattered all through the specification and are difficult to find. Applicant is requested to create a section entitled description of

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drawings and enlist all relevant figure descriptions therein based on the support provided in the disclosure to be compliant with the style of U.S. patent application.

***Claim Objections***

Claim 12 is objected for recitation of non-elected subject matter therein. More specifically, SEQ ID NO:3, 27 and 31 are directed to porcine nucleic acid sequences, which are not under examination. Applicant is advised to delete said sequences from claim 12.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Said claims as recited are reading on the human chromosome or mRNA produced in human cells which are products of nature and unpatentable. Applicant may overcome this rejection by recitation of the term "isolated" or "purified" at the beginning of said claims.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 11-17, 21-23, 26, 38-43 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably

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convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The phrase "at least 70% identity to SEQ ID NO:4 or SEQ ID NO:30" in claims 11 (and its dependent claims 12-16), claim 14, claim 21 (and its dependent claims 22-23 and 26-27) and claims 38-41 could not be found anywhere in the disclosure, see also claims 38-41 and method of use thereof (see claims 42-43). Therefore, for examination purposes all percentage identity phrases in claims 11 and 14, 21, 38-41 are considered to be **new matter**.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-13, 14-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 (and its dependent claims 12-13, 16-17) and claim 14 (and its dependent claims 15) recite phrases "ESTGENBANK AA178898 and EST W94830", which are indefinite. Applicant is well aware that EST and Genbank databases frequently update their contents and renumber their accession numbers. Therefore, said accession numbers, over time, do not constitute reliable identification numbers for nucleic acids claimed. Appropriate correction is required.

Claims 14-15, 21-23, and 42-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "functionally altered"

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in claim 14 (and its dependent claims 15), claim 21 (and its dependent claims 22-23) and claims 42-43 or the term “functionally altered allele” in claims 22-23 are indefinite. In page 7 applicant tries to define said term but said definition is unclear because it does not specify what specific activity applicant is referring to. For example, is it altered kinase or altered phosphatase activity or let us say regulation of kinase activity of alpha subunit of human AMPK etc. Applicant is advised to clarify said term in response to this office action.

In traversal of rejection directed to “functionally altered allele” applicant argues that the term is clear because based on figure 3 and explanations provided in pages 24-25 of the disclosure the skilled artisan would have understood the location of the exemplary mutations.

This argument was fully considered but was found **unpersuasive**. The examiner maintains that firstly as explained above, it is unclear as to what “function” applicant is referring to. Is it kinase, phosphatase function or some other function. Applicant is reminded that in above mentioned claims he/she is referring to functionally altered alleles and not structurally altered alleles. By explaining where mutations occur one still does not know what “altered function” is obtained.

Also, looking at Figure 3 and the mentioned disclosure pages the examiner, in contrast to applicant's view, continues to be confused as to which residues in SEQ ID NO:4 or SEQ ID NO:30 should be mutated to obtain the “altered function” even if she knew what said function was. This is because In page 24 of the disclosure the legend does not identify displayed sequences by a “SEQ ID NO:”. Further the corresponding

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CBS domains (if they are the regions to be mutated for altered function) of each aligned sequence are not even identified.

Claims 14-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "first CBS domain" in claim 14 and its dependent claims 15 is unclear. Applicant has not defined this phrase in the disclosure. In Figure 3 applicant displays a series of CBS domains belonging to pigG3 amino acid sequence. It is unclear how those regions in pigG3 polypeptide have anything to do with a DNA fragment encoding the CBS domain of human gamma subunit of AMPK. Appropriate clarification is required. Also in claim 14(c) it is unclear how many amino acids constitute the term "a part".

Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "said mutation" in claim 23 which depends from claim 22 has no antecedent basis and the claim does not make sense.

Claims 14-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "specifically hybridizes" in claim 14 (and its dependent claims 15) remains indefinite according to previous office action. Applicant has not defined said phrase specifically in the disclosure. It is also unclear what salt and temperature conditions constitute stringent hybridization conditions as previously explained.

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In traversal of this rejection which was originally directed to claim 23 (now amended) applicant argues the following: a person having ordinary skill in the art by reading the disclosure at the time of filing would have understood the meaning of the term "specific hybridization". He/she then refers to page 15 which discloses that methods allowing for specific hybridization of a probe only with a perfectly matching complementary sequence are known in the art and cites two references in support of said statement.

This argument was fully considered but was found **unpersuasive**. The examiner respectfully disagrees with applicant that a definition for said term was either known to the skilled artisan at the time of filing or can be understood based on what is provided in page 15 of the disclosure. Applicant is well aware that prior art has no consensus definition for said phrase and therefore said phrase defines DNA hybridizing under different salt and temperature conditions depending from the laboratory or text book it originates from. Further applicant's disclosure does not define said term explicitly but merely provides examples of the types of methods that may be utilized for specific hybridization. If by "specific hybridization" applicant means hybridizing to 100% complementary sequences he/she is advised to amend said claims to express said fact.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 11-17, 21-23, 26-27, 38-43 remain rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for SEQ ID NO:4 and 30,



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does not reasonably provide enablement for any nucleic acid sequence encoding a polypeptide comprising at least 70% homologs of SEQ ID NO:4 or 30 with no function as well as a method of use of such nucleic acid sequences according to previous office action.

The criteria for undue experimentation, summarized in *re Wands*, 8, USPQ2n 1400 (Fed. Cir. 1988) are: 1) the quantity of experimentation necessary, 2) the amount of direction or guidance presented, 3) the presence and absence of working examples, 4) the nature of the invention, 5) the state of prior art, 6) the relative skill of those in the art, 7) the predictability or unpredictability of the art, and 8) the breadth of the claims.

The disclosure fails to teach which residues within claimed nucleic acid sequences set forth as SEQ ID NO:4 or 30 are in charge of assigning function to its expression products. No examples of such residues are provided either. Current state of the art indicates that once more than 4-5 bases of a DNA sequence encoding a full-length polypeptide is simultaneously mutated said mutated sequence is no longer necessarily capable of encoding a product with a function identical to said full-length polypeptide.

Therefore due to lack of sufficient guidance and examples provided and due to unpredictability of prior art as to which residues within a DNA sequence is in charge of assigning function to its expression products one of skill in the art has to go through the burden of undue experimentation in order to screen for those SEQ ID NO:4 or 30 homologs that are able to regulate the catalytic activity of alpha subunit of AMPK and as such the claims go beyond the scope of the disclosure.

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Since claimed nucleic acids are not fully enabled (claims 11-15, 38-41) vectors and host cells comprising said products (claims 16-17) and methods of use of said products (claims 21-23, 26-27 and 42-43) are not enabled either.

In traversal of the previous enablement rejection directed to claims 22-23 applicant argues the following: that HumG3 sequence in Figure 3 is SEQ ID NO:30 and the arrow in figure 3 shows the location of RN(R41Q)mutation. According to applicant the skilled artisan could have aligned SEQ ID NO:4 and 30 to ascertain that SEQ ID NO:30 has 159 additional amino acids at its N-terminal as compared to SEQ ID NO:4 and thus the region between amino acids 30-50 of SEQ ID NO:4 correspond to residues 189-209 of SEQ ID NO:30. and therefore based on the teachings of the disclosure no undue experimentation would have been required to carry out the method of claims 22-23.

This argument was fully considered but was found **unpersuasive**. Firstly, in view the fact that the examiner misunderstood that HumG3 set forth as SEQ ID NO:30 to have SEQ ID NO:4, due to scarcity of information provided in the disclosure, applicant is respectfully and once again, is requested to label all SEQ ID NO:'s listed in Figure 3 with their corresponding identification numbers to avoid confusion. Secondly in the absence of applicant's explanations the examiner would never have imagined that the first 159 N-terminal sequences of SEQ ID NO:30 is not the region wherein mutation resulting in functionally altered mutants occur. Applicant nowhere in the disclosure explained such information. If, in fact, human AMPK gamma subunit regions in which mutations result in functionally altered mutants are restricted and specific, applicant is

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advised to recite said specific regions directly into the claims to avoid further enablement issues. However, instant claims do not restrict or specify the regions involved in creating functionally altered mutants and therefore the rejection is maintained for the reasons of record.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11, 13-16, 38 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Shibata et al. (Genome Res., 10(10), 1617-1630, 2000). It should be noted that the phrase "at least 70% homologs of SEQ ID NO:30" recited in claims 11 and 14 does not have support in the PCT parent application and only enjoys the priority date of 10/4/2002. Based on said priority date, Shibata teaches a DNA sequence encoding a polypeptide having 83.6% identity to SEQ ID NO:30 of this invention, attached to a portion of a 3' and a 5' adjacent genomic DNA sequence as well as vectors and host cells comprising said products, anticipating claims 11, 13-16, 38 and 40.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 11, 13-15, 38-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Rothschild et al. (US20030017470A1, published 1/2003). It should again

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be noted that the phrase "at least 70% homologs of SEQ ID NO:4" recited in claims 11 and 14 do not have support in the PCT parent application and only enjoys the filing date of 10/4/2002). Based on that priority date, Rothschild teaches a DNA sequence encoding a polypeptide having 97.2% identity (see the attached sequence alignment) to SEQ ID NO:4 of this application attached to a portion of a 3' and/or a 5' adjacent genomic DNA sequence (see its SEQ ID NO:3).

**No claim is allowed.**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

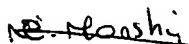
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maryam Monshipouri whose telephone number is (571) 272-0932. The examiner can normally be reached on 7:00 a.m to 5:30 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kerr Kathleene can be reached on (571) 272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Maryam Monshipouri Ph.D.

Primary Examiner

\*\*\*

; PRIOR APPLICATION NUMBER: 60/299,111  
 ; PRIOR FILING DATE: 2001-06-18  
 ; NUMBER OF SEQ ID NOS: 17  
 ; SOFTWARE: PatentIn version 3.0  
 ; SEQ ID NO 2  
 ; LENGTH: 464  
 ; TYPE: PRT  
 ; ORGANISM: Sus scrofa  
 US-09-950-022-2

Attachment

Query Match 97.2%; Score 1507; DB 10; Length 464;  
 Best Local Similarity 97.0%; Pred. No. 8.6e-144;  
 Matches 296; Conservative 4; Mismatches 5; Indels 0; Gaps 0;

Qy 1 MRFMQEHTCYDAMATSSKLVIPTMLEIKKAPFALVANGVRAAPLWDSKKQSFVGMILTIT 60  
 Db 160 MHFMQEHTCYDAMATSSKLVIPTMLEIKKAPFALVANGVRAAPLWDSKKQSFVGMILTIT 219  
 Qy 61 DFILVLHRYRSPVLQIYEIEQHKTWREIYLQGCCKPLVSI SPNDSLFEAVYTLIKNR 120  
 Db 220 DFILVLHRYRSPVLQIYEIEEHKTWREIYLQGCCKPLVSI SPNDSLFEAVYALIKNR 279  
 Qy 121 IHRLPVLDPVSGNVLHILTHKRLKFLHIFGSLPRPSFLYRTIQDLGIGTFRDLAVVLE 180  
 Db 280 IHRLPVLDPVSGAVLHILTHKRLKFLHIFGTLLPRPSFLYRTIQDLGIGTFRDLAVVLE 339  
 Qy 181 TAPILTALDIFVDRRVSALPVVNECGQVVGLYSRFDVIHLAAQQTYNHLDMSVGEALRQR 240  
 Db 340 TAPILTALDIFVDRRVSALPVVNETGQVVGLYSRFDVIHLAAQQTYNHLDMSVGEALRQR 399  
 Qy 241 TLCLEGVLSQCPHESLGEVIDRIAREQVHRLVLVDETQHLLGVVSLSDILQALVLSPAGI 300  
 Db 400 TLCLEGVLSQCPHETLGEVIDRIVREQVHRLVLVDETQHLLGVVSLSDILQALVLSPAGI 459  
 Qy 301 DALGA 305  
 Db 460 DALGA 464

RESULT 9

US-09-950-022-4  
 ; Sequence 4, Application US/09950022  
 ; Publication No. US20030017470A1  
 ; GENERAL INFORMATION:  
 ; APPLICANT: Rothschild, Max  
 ; APPLICANT: Ciobanu, Dan  
 ; APPLICANT: Malek, Massoud  
 ; APPLICANT: Plastow, Graham  
 ; TITLE OF INVENTION: Novel PRKAG3 Alleles and Use fo the Same as Genetic Markers for  
 ; TITLE OF INVENTION: Reproductive and Meat Quality Traits  
 ; FILE REFERENCE: P04668US3  
 ; CURRENT APPLICATION NUMBER: US/09/950,022  
 ; CURRENT FILING DATE: 2001-09-10  
 ; PRIOR APPLICATION NUMBER: 60/231045  
 ; PRIOR FILING DATE: 2000-09-08  
 ; PRIOR APPLICATION NUMBER: 60/260,239  
 ; PRIOR FILING DATE: 2001-01-08  
 ; PRIOR APPLICATION NUMBER: 60/299,111  
 ; PRIOR FILING DATE: 2001-06-18  
 ; NUMBER OF SEQ ID NOS: 17  
 ; SOFTWARE: PatentIn version 3.0  
 ; SEQ ID NO 4  
 ; LENGTH: 464 (enclosed by SEQ ID NO:3)  
 ; TYPE: PRT  
 ; ORGANISM: Sus scrofa  
 US-09-950-022-4

Query Match 97.2%; Score 1507; DB 10; Length 464;  
 Best Local Similarity 97.0%; Pred. No. 8.6e-144;  
 Matches 296; Conservative 4; Mismatches 5; Indels 0; Gaps 0;

Qy 1 MRFMQEHTCYDAMATSSKLVIPTMLEIKKAPFALVANGVRAAPLWDSKKQSFVGMILTIT 60  
 Db 160 MHFMQEHTCYDAMATSSKLVIPTMLEIKKAPFALVANGVRAAPLWDSKKQSFVGMILTIT 219  
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 Db 220 DFILVLHRYRSPVLQIYEIEEHKTWREIYLQGCCKPLVSI SPNDSLFEAVYALIKNR 279  
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 Db 280 IHRLPVLDPVSGAVLHILTHKRLKFLHIFGTLLPRPSFLYRTIQDLGIGTFRDLAVVLE 339  
 Qy 181 TAPILTALDIFVDRRVSALPVVNECGQVVGLYSRFDVIHLAAQQTYNHLDMSVGEALRQR 240  
 Db 340 TAPILTALDIFVDRRVSALPVVNETGQVVGLYSRFDVIHLAAQQTYNHLDMSVGEALRQR 399  
 Qy 241 TLCLEGVLSQCPHESLGEVIDRIAREQVHRLVLVDETQHLLGVVSLSDILQALVLSPAGI 300  
 Db 400 TLCLEGVLSQCPHETLGEVIDRIVREQVHRLVLVDETQHLLGVVSLSDILQALVLSPAGI 459

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US-09-950-022-6
; Sequence 6, Application US/09950022
; Publication No. US20030017470A1
; GENERAL INFORMATION:
; APPLICANT: Rothschild, Max
; APPLICANT: Ciobanu, Dan
; APPLICANT: Malek, Massoud
; APPLICANT: Plastow, Graham
; TITLE OF INVENTION: Novel PRKAG3 Alleles and Use for the Same as Genetic Markers for
; TITLE OF INVENTION: Reproductive and Meat Quality Traits
; FILE REFERENCE: P04668US3
; CURRENT APPLICATION NUMBER: US/09/950,022
; CURRENT FILING DATE: 2001-09-10
; PRIOR APPLICATION NUMBER: 60/231045
; PRIOR FILING DATE: 2000-09-08
; PRIOR APPLICATION NUMBER: 60/260,239
; PRIOR FILING DATE: 2001-01-08
; PRIOR APPLICATION NUMBER: 60/299,111
; PRIOR FILING DATE: 2001-06-18
; NUMBER OF SEQ ID NOS: 17
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 6
; LENGTH: 464
; TYPE: PRT
; ORGANISM: Sus scrofa
US-09-950-022-6

```

Qy	1	MRPFQEHCTCYDAMATSSKLVI	FD	TMLEIKKAPFALVANGVRAAPLWDSKKQSFVGM	LT	60	
Db	160	MHPMFQEHCTCYDAMATSSKLVI	FD	TMLEIKKAPFALVANGVRAAPLWDSKKQSFVGM	LT	219	
Qy	61	DFILVLHRYRYSPLVQIYEIEQH	KIETWREIYLQGC	FKPLVSI	SPNDSLFEAVYTLIKNR	120	
Db	220	DFILVLHRYRYSPLVQIYEIEEH	KIETWREIYLQGC	FKPLVSI	SPNDSLFEAVYALIKNR	279	
Qy	121	IHRLPVLDPVSGNVHLHILTHKR	LLKFLHIFGSL	LRPRSPFLYRTIQDL	GIGTFRDLAVVLE	180	
Db	280	IHRLPVLDPVSGAVLHILHILTHKR	LLKFLHIFGTL	LRPRSPFLYRTIQDL	GIGTFRDLAVVLE	339	
Qy	181	TAPILTALDIFVDRRVSALFPV	NECGQVVG	LYSRFDVIHLAAQQTYNH	LDMSVGEALRQR	240	
Db	340	TAPILTALDIFVDRRVSALFPV	NETGQVVG	LYSRFDVIHLAAQQTYNH	LDMMVGEALRQR	399	
Qy	241	TLCLEGVLS	CPHESLGEVIDRIAREQVHRLV	LVDE	TQHLLGVVLS	SDILQALVLS	PAGI 300
Db	400	TLCLEGVLS	CPHETLGEVIDRIVREQVHRLV	LVDE	TQHLLGVVLS	SDILQALVLS	PAGI 459
Qy	301	DALGA 305					
Db	460	DALGA 464					

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US-09-950-022-8
; Sequence 8, Application US/09950022
; Publication No. US20030017470A1
; GENERAL INFORMATION:
; APPLICANT: Rothschild, Max
; APPLICANT: Ciobanu, Dan
; APPLICANT: Malek, Massoud
; APPLICANT: Plastow, Graham
; TITLE OF INVENTION: Novel PKAG3 Alleles and Use fo the Same as Genetic Markers for
; TITLE OF INVENTION: Reproductive and Meat Quality Traits
; FILE REFERENCE: P04668US3
; CURRENT APPLICATION NUMBER: US/09/950,022
; CURRENT FILING DATE: 2001-09-10
; PRIOR APPLICATION NUMBER: 60/231045
; PRIOR FILING DATE: 2000-09-08
; PRIOR APPLICATION NUMBER: 60/260,239
; PRIOR FILING DATE: 2001-01-08
; PRIOR APPLICATION NUMBER: 60/299,111
; PRIOR FILING DATE: 2001-06-18
; NUMBER OF SEQ ID NOS: 17
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 8
; LENGTH: 464
; TYPE: PRT
; ORGANISM: Sus scrofa
US-09-950-022-8

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19	1004	41.8	978	1	AL533446	AL533446	AL533446
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44	892	37.1	833	1	AL519198	AL519198	AL519198
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## ALIGNMENTS

## RESULT 1

AK036585

LOCUS AK036585 2256 bp mRNA linear HTC 03-APR-2004

DEFINITION Mus musculus adult male bone cDNA, RIKEN full-length enriched library, clone:9830138C07 product:5'-AMP-ACTIVATED PROTEIN KINASE, GAMMA-3 SUBUNIT (AMPK GAMMA-3 CHAIN) (AMPK GAMMA3) homolog [Homo sapiens], full insert sequence.

ACCESSION AK036585

VERSION AK036585.1 GI:26331523

KEYWORDS HTC; CAP trapper.

SOURCE Mus musculus (house mouse)

ORGANISM Mus musculus

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

REFERENCE 1

AUTHORS Carninci,P. and Hayashizaki,Y.

TITLE High-efficiency full-length cDNA cloning

JOURNAL Meth. Enzymol. 303, 19-44 (1999)

MEDLINE 99279253

PUBMED 10349636

REFERENCE 2

AUTHORS Carninci,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K., Itoh,M., Konno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.

TITLE Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes

JOURNAL Genome Res. 10 (10), 1617-1630 (2000)

MEDLINE 20499374

PUBMED 11042159

REFERENCE 3

AUTHORS Shibata,K., Itoh,M., Aizawa,K., Nagaoka,S., Sasaki,N., Carninci,P., Konno,H., Akiyama,J., Nishi,K., Kitsunai,T., Tashiro,H., Itoh,M., Sumi,N., Ishii,Y., Nakamura,S., Hazama,M., Nishine,T., Harada,A., Yamamoto,R., Matsumoto,H., Sakaguchi,S., Ikegami,T., Kashiwagi,K., Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E., Watahiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura,S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and Hayashizaki,Y.

TITLE RIKEN integrated sequence analysis (RISA) system-384-format sequencing pipeline with 384 multicapillary sequencer

JOURNAL Genome Res. 10 (11), 1757-1771 (2000)

MEDLINE 20530913

PUBMED 11076861

REFERENCE 4

AUTHORS The RIKEN Genome Exploration Research Group Phase II Team and the FANTOM Consortium.

TITLE Functional annotation of a full-length mouse cDNA collection

JOURNAL Nature 409, 685-690 (2001)



REFERENCE 5  
 AUTHORS The FANTOM Consortium and the RIKEN Genome Exploration Research Group Phase I & II Team.  
 TITLE Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs  
 JOURNAL Nature 420, 563-573 (2002)  
 REFERENCE 6 (bases 1 to 2256)  
 AUTHORS Adachi,J., Aizawa,K., Akimura,T., Arakawa,T., Bono,H., Carninci,P., Fukuda,S., Furuno,M., Hanagaki,T., Hara,A., Hashizume,W., Hayashida,K., Hayatsu,N., Hiramoto,K., Hiraoka,T., Hirozane,T., Hori,F., Imotani,K., Ishii,Y., Itoh,M., Kagawa,I., Kasukawa,T., Kato,H., Kawai,J., Kojima,Y., Kondo,S., Konno,H., Kouda,M., Koya,S., Kurihara,C., Matsuyama,T., Miyazaki,A., Murata,M., Nakamura,M., Nishi,K., Nomura,K., Numazaki,R., Ohno,M., Ohsato,N., Okazaki,Y., Saito,R., Saitoh,H., Sakai,C., Sakai,K., Sakazume,N., Sano,H., Sasaki,D., Shibata,K., Shinagawa,A., Shiraki,T., Sogabe,Y., Tagami,M., Tagawa,A., Takahashi,F., Takaku-Akahira,S., Takeda,Y., Tanaka,T., Tomaru,A., Toya,T., Yasunishi,A., Muramatsu,M. and Hayashizaki,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (16-JUL-2001) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center (GSC), RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.jp, URL:http://genome.gsc.riken.jp/, Tel:81-45-503-9222, Fax:81-45-503-9216)  
 COMMENT cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues. Please visit our web site for further details. URL:http://genome.gsc.riken.jp/ URL:http://fantom.gsc.riken.jp/.  
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 /db\_xref="GI:26331524"  
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## ORIGIN

## Alignment Scores:

Pred. NO.:	4.94e-171	Length:	2256
Score:	2010.00	Matches:	399
Percent Similarity:	89.25%	Conservative:	16
Best Local Similarity:	85.81%	Mismatches:	48
Query Match:	83.65%	Indels:	2
DB:	3	Gaps:	2

US-10-070-794A-30 (1-464) x AK036585 (1-2256)

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RESULT 2
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DEFINITION      56028562H1 FLP Homo sapiens cDNA, mRNA sequence.
ACCESSION       CD628194
VERSION         CD628194.1  GI:40276460
KEYWORDS        EST
SOURCE          Homo sapiens (human)
ORGANISM        Homo sapiens

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